



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-0983; Directorate Identifier 2012-CE-001-AD;]

RIN 2120-AA64

Airworthiness Directives; Piper Aircraft, Inc. Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede an existing airworthiness directive (AD) that applies to all Piper Aircraft, Inc. Models PA-31, PA-31-325, and PA-31-350 airplanes. The existing AD currently requires a detailed repetitive inspection of the exhaust system downstream of the turbochargers and repair or replacement of parts as necessary. Since we issued that AD, forced landings of aircraft have occurred due to exhaust system failures upstream of aircraft turbochargers and between recurring detailed inspections. This proposed AD would require both visual and detailed repetitive inspections, expanding the inspection scope to include the entirety of each airplane exhaust system. We are proposing this AD to prevent the possibility of an inflight powerplant fire due to an exhaust system failure.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Piper Aircraft, Inc., 2926 Piper Drive, Vero Beach, Florida 32960; telephone: (772) 567-4361; fax: (772) 978-6573; Internet: www.piper.com/home/pages/Publications.cfm. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Gary Wechsler, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, 1701 Columbia Avenue, College Park, Georgia 30337; telephone: (404) 474-5575; fax: (404) 474-5606; email: gary.wechsler@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section.

Include “Docket No. FAA-2012-0983; Directorate Identifier 2012-CE-001-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On April 7, 1986, AD 82-16-05 R1, amendment 39-5278 (51 FR 11707-01, April 7, 1986), was published in the Federal Register for certain Piper Aircraft, Inc. Models PA-31, PA-31-325, and PA-31-350 airplanes. That AD requires a detailed repetitive inspection of the exhaust system downstream of the turbochargers and repair or replacement of parts as necessary. That AD resulted from exhaust system failures downstream from turbochargers. We issued that AD to prevent the possibility of an inflight powerplant fire due to an exhaust system failure.

Actions Since Existing AD Was Issued

Since we issued AD 82-16-05 R1 (51 FR 11707-01, April 7, 1986), forced landings of aircraft have occurred due to exhaust system failures upstream of aircraft turbochargers and between recurring detailed inspections.

FAA’s Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

Proposed AD Requirements

This proposed AD would retain certain requirements of AD 82-16-05 R1 (51 FR 11707-01, April 7, 1986). This proposed AD would require a detailed repetitive inspection of the entire exhaust systems.

Costs of Compliance

We estimate that this proposed AD affects 1,016 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Visual inspection	2 work-hours X \$85 per hour = \$170	Not applicable	\$170	\$172,720
Disassembled inspection	5 work-hours X \$85 per hour = \$425	Not applicable	\$425	\$431,800

The on-condition costs of exhaust system part repairs and replacement cannot be predicted because the multitude of manner and environments in which aircraft operate will result in widely varying exhaust system conditions over time.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds

necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 82-16-05 R1, Amendment 39-5278 (51 FR 11707-01, April 7, 1986), and adding the following new AD:

Piper Aircraft, Inc.: Docket No. FAA-2012-0983; Directorate Identifier 2012-CE-001-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD supersedes AD 82-16-05 R1, Amendment 39-5278.

(c) Applicability

This AD applies to turbocharged Piper Aircraft, Inc. Models PA-31, PA-31-325, and PA-31-350 airplanes, all serial numbers, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 78, Engine Exhaust.

(e) Unsafe Condition

This AD was prompted by the forced landings of aircraft due to exhaust system failures between recurring detailed inspections. We are issuing this AD to prevent the possibility of an inflight powerplant fire due to an exhaust system failure.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Visual Inspection

Within the next 50 hours time-in-service (TIS) after the effective date of this AD or within the next 6 months after the effective date of this AD, whichever occurs first, and repetitively thereafter at intervals not to exceed 50 hours TIS or 6 months, whichever occurs first, inspect the entirety of each exhaust system by gaining access to (but not disassembling) each exhaust system. Using a flashlight and a mirror, visually inspect the entirety of each exhaust system for bulges, burned areas, corrosion, cracks, deformation, exhaust stains, and holes and pinholes. Riveted couplings should be checked for loose rivets and cracks emanating from rivet holes. Inspection procedure references can be found in FAA Advisory Circular 43.13-1B, Change 1, dated September 27, 2001, Acceptable Methods, Techniques, And Practices - Aircraft Inspection and Repair (http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/99C827DB9BAAC81B86256B4500596C4E?OpenDocument&Highlight=ac%2043.13-1b).

(h) Detailed Inspection

Within the next 100 hours TIS after the effective date of this AD or within the next 12 months after the effective date of this AD, whichever occurs first, and repetitively thereafter at intervals not to exceed 100 hours TIS or 12 months, whichever occurs first, do the following:

(1) Gain access to each exhaust system and remove all exhaust system v-band couplings.

Note 1 to paragraph (h) of this AD: During removal, we recommend not opening the v-band couplings more than the MINIMUM diameter necessary to clear coupled flanges.

(2) Using either a dye-penetrant inspection method or a light and a 10-power magnifying glass (inspection procedure references can be found in FAA Advisory

Circular 43.13-1B, Change 1, dated September 27, 2001, Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair
(http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/99C827DB9BAAC81B86256B4500596C4E?OpenDocument&Highlight=ac%2043.13-1b), accomplish the following:

(i) Inspect the tailpipe assembly for damage including bulges, burned areas, corrosion, cracks, deformation, exhaust stains, and holes and pinholes.

(ii) Inspect each v-band coupling for damage including bending, cracks (those emanating from rivets, too), failed spot welds, indications of exhaust flanges bottoming in couplings, loose rivets, overstress, and spreading of v-band segments. Inspect the bolt and nut of each coupling for thread damage.

(iii) Inspect the flanges of the exhaust system (which mate with the transition), the transition, the tail pipe, and the turbocharger (uncoupled) for cracks, distortion, and evidence indicative of improper surface mating.

(3) Inspect the three exhaust system slip joints between each turbocharger and its closest riser for seizure.

Note 2 to paragraph (h) of this AD: We established the repetitive inspection compliance times of this AD so they may coincide with scheduled oil changes and annual inspections.

(i) Corrective Actions

(1) If any damage is found as a result of the inspections required in paragraph (g) of this AD, before further flight, do the following corrective actions:

(i) Replace loose or damaged v-band couplings following the instructions in paragraph (k) of this AD.

(ii) Repair or replace loose fasteners and damaged exhaust system parts with airworthy parts.

(2) If any damage is found as a result of the inspections listed in paragraph (h) of this AD, before further flight, do the following corrective actions:

(i) Replace any loose or damaged v-band couplings following the instructions in paragraph (k) of this AD.

(ii) Repair or replace loose fasteners, seized slip joints, and damaged exhaust system parts with airworthy parts.

(iii) Replace any part exhibiting flange cracking or distortion, and remove any carbon deposits from mating flange surfaces.

(j) Mandatory Replacement

(1) Initially replace the v-band coupling following the procedures in paragraph (k) of this AD at whichever of the following occurs later:

(i) The v-band coupling reaches a total of 1,000 hours time-in-service (TIS); or

(ii) 50 hours TIS after the effective date of this AD, or 6 months after the effective date of this AD, whichever occurs earlier.

(2) After the initial replacement required in paragraph (j)(1) of this AD, repetitively thereafter replace the v-band coupling every 1,000 hours TIS.

(k) Flange and V-band Coupling

(1) Install serviceable and replacement v-band couplings following the applicable instructions contained in Piper Aircraft Corporation Service Bulletin No. 644E, dated May 9, 2012 and/or Lycoming Service Instruction No. 1238B, dated January 6, 2010.

(2) Use the applicable torque values specified within Piper Aircraft Corporation Service Bulletin No. 644E, dated May 9, 2012, for Piper v-band couplings; and within Lycoming Service Instruction No. 1238B, dated January 6, 2010, for Lycoming v-band couplings; making sure the torque indicator wrench socket is properly aligned to prevent side loads upon the (v-band coupling) bolt.

(3) Align each flange couple so that mating flange surfaces are flat against each other (do not use a v-band coupling to pull flanges into alignment).

(4) Verify that the locknuts exhibit a prevailing torque, and replace any locknuts and/or mating couplings with airworthy parts when locknuts are not exhibiting a prevailing torque.

Note 1 to paragraph (k) of this AD: During installation, we recommend not opening the v-band coupling more than the MINIMUM diameter necessary to clear coupled flanges.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Atlanta Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(m) Related Information

(1) For more information about this AD, contact Gary Wechsler, Aerospace Engineer, Atlanta ACO, FAA, 1701 Columbia Avenue, College Park, Georgia 30337; telephone: (404) 474-5575; fax: (404) 474-5606; email: gary.wechsler@faa.gov.

(2) For service information identified in this AD, contact Piper Aircraft, Inc., 2926 Piper Drive, Vero Beach, Florida 32960; telephone: (772) 567-4361; fax: (772) 978-6573; Internet: www.piper.com/home/pages/Publications.cfm. You may review

copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Issued in Kansas City, Missouri, on September 11, 2012.

Earl Lawrence,
Manager, Small Airplane Directorate,
Aircraft Certification Service.

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